Exercise 7 : Financial Forecasting

import java.util.\*;

class FinancialForecast {

private List<Double> prices;

public FinancialForecast() {

this.prices = new ArrayList<>();

}

public void addPrice(double price) {

prices.add(price);

}

public double getMovingAvg(int k) {

if (prices.size() < k) {

System.out.println("Insufficient data for " + k + "-day average.");

return 0;

}

double sum = 0;

for (int i = prices.size() - k; i < prices.size(); i++) {

sum += prices.get(i);

}

return sum / k;

}

public String detectTrend() {

double shortTerm = getMovingAvg(3);

double longTerm = getMovingAvg(5);

if (shortTerm > longTerm) {

return "Upward trend expected";

} else if (shortTerm < longTerm) {

return "Downward trend expected";

} else {

return "Stable trend";

}

}

public void displayPrices() {

System.out.println("Stock Price History: " + prices);

}

}

public class Main {

public static void main(String[] args) {

FinancialForecast forecast = new FinancialForecast();

forecast.addPrice(101.5);

forecast.addPrice(102.3);

forecast.addPrice(100.2);

forecast.addPrice(99.8);

forecast.addPrice(98.6);

forecast.addPrice(100.0);

forecast.addPrice(102.1);

forecast.displayPrices();

System.out.println("\n3-day Moving Average: " + forecast.getMovingAvg(3));

System.out.println("5-day Moving Average: " + forecast.getMovingAvg(5));

System.out.println("\nForecast Trend: " + forecast.detectTrend());

}

}

Output:

